

schoolmaster, which he followed for some years. His own tastes, however, gradually won him over to the close prosecution of scientific study, and in 1868, when Mr Edward Crossley established his observatory in Halifax, he asked Mr Gledhill to undertake the work of observer. The measurement of double stars was a distinguishing feature of his work there, and the results were embodied in *A Handbook of Double Stars*, which was written with the co-operation of the Rev. J. Wilson, M.A. (now Canon of Worcester) and Mr Crossley. He also contributed several papers on planetary observations to the *Monthly Notices of the R.A.S.*

The erection of the 3-foot reflector in 1885 (built by Dr Common, and subsequently presented to the Lick Observatory by Mr Crossley) promised a more extended sphere of work, but it was found that, for purposes of exact observation, the climate of Halifax was hopelessly unsuitable, and the serious use of the telescope was soon discontinued.

After about two years of indifferent health, Mr Gledhill (soon after Mr Crossley's death in 1905) removed to Hoddesdon, Herts, where he died on 20th March 1906.

His scientific attainments were by no means a complete indication of his mental activity and varied tastes. He was an omnivorous reader, a very fair amateur violinist and organist, and, later in life, became an enthusiastic fisherman. Apart from his more serious work in astronomy, there are probably not a few amateurs living who have at some time or other felt their indebtedness to his ready and willing assistance in their little difficulties.

Mr Gledhill was elected a Fellow of the Society in May 1874.

F. H. C.

WILLIAM JOHNSTON was born, 10th August 1819, at "Stockholm Farm," in the parish of Dumfries, Scotland. He was for many years a furniture manufacturer in Gloucester, but later dealt in curios, becoming an authority both in England and America. In 1843 he married Miss Avery, of Gloucester, who died in 1898. He was interested in a variety of subjects, as may be judged from the titles of his pamphlets,—*The Machinery of the Heavens*; *The Immortality of all Living Creatures*; *Are Intoxicating Beverages Necessaries of Life?* He died on 10th January 1907, leaving four sons and four daughters.

Mr Johnston was elected a Fellow of the Society on 8th January 1897.

ALFRED EDWARD NICHOLLS was born in 1866 at Stroud, Gloucestershire. Immediately on leaving school he went to sea, and after serving in all grades as a mariner, identified himself with a small nautical school in Limehouse, of which he became principal in 1894. Under his management it became one of the most successful schools of navigation in the country. On the completion of the Passmore Edwards Sailors' Palace at Limehouse, three years ago,

the school was transferred to that building, where it has since been carried on under the name of the King Edward VII. Nautical School, and has had many among its students who have risen high in the profession. Captain Nicholls was the author of several works on navigation and astronomy, including *Seamanship and Guide*, and *Concise Rules to Board of Trade Examinations*. He was a member of the British Astronomical Association, and had taken up work in connection with the Variable Star Section.

He died suddenly, from the result of an operation, on 4th March 1906, leaving a widow and six young children.

He was elected a Fellow of the Royal Astronomical Society in March 1905.

ROBERT RAWSON was born at Brinsley, a small colliery village nine miles from Nottingham, on the 22nd July 1814. His father, John Rawson, was a man of very limited means, whose life seems to have been a long struggle against adverse circumstances.

Robert Rawson was a child of seven when he began work in the coal-mines of Messrs Barter & Walker at Eastwood, two or three miles from his home at Brinsley, and he never forgot the long walks in all weathers to and from the mines. It was during this sixteen years, when working as a collier, that he laid the foundation of his future success. One day he came across a periodical containing a variety of mathematical questions, to some of which he could see the answer; but not being able to master all, he made inquiries and was told that he wanted an "arithmetic." Accordingly, one Saturday afternoon, on leaving the pit, he walked into Nottingham and bought a second-hand arithmetic for two-pence. This he used to find the answers to the particular questions; he never worked through it. In the same way he acquired an algebra, then an old *Euclid*, and more advanced works. In 1837, when Robert Stevenson commenced building the Manchester and Leeds Railway, Rawson obtained employment as clerk and draughtsman in a constructor's office at Rochdale. He did not seek this situation; it was offered under the following circumstances. A controversy arose in a local paper as to how the level of the road should be altered at a curve in the railway, so as to counteract the effect of centrifugal force. Rawson gave his solution, and a few days later the railway engineer sent for him. As he presented himself in collier's dress and spoke the colliers' dialect, there was at first some misunderstanding. In the end it was arranged that he should leave the mines and go to the office. When the railway was completed in 1842 he removed to Manchester and became a teacher of mathematics, and kept up a correspondence with the *York Courant*, the *Mathematician*, the *Lady's and Gentleman's Diary*. He also wrote papers on the "Summation of Series," "Definite Integration," etc. etc., which were published in the *Memoirs* of the Manchester Literary and Philosophical Society.

In 1845 he joined the Manchester Society, and two years later had a seat on its council, where he came into contact with leading